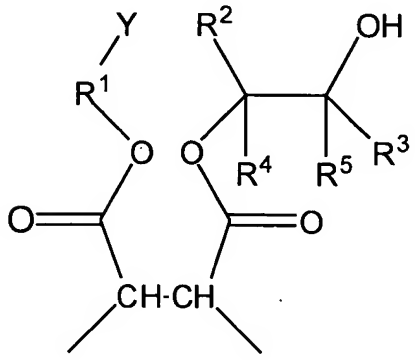
What is claimed is:

1. A coating composition comprising a vinyl polymer having a monomer unit selected from the group consisting of



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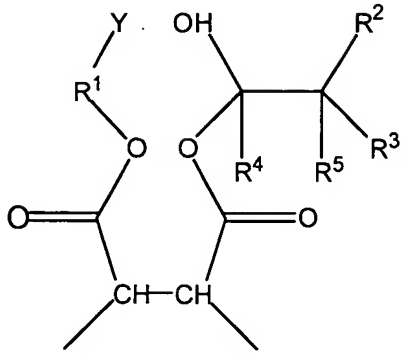
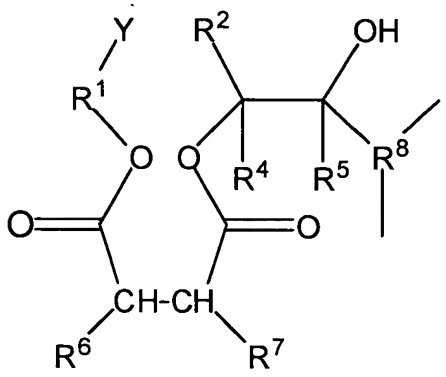


, and



, wherein Y is a carbamate or urea group, R^1 and R^3 are each independently alkyl groups having from 1 to 12 carbon atoms, optionally including oxygen or other heteroatoms, R^2, R^4 and R^5 are each independently H or alkyl of 1 to 4 carbon atoms, R^6 and R^7 are each independently H or an alkyl group having from 1 to 12 carbon atoms or R^6 and R^7 together are part of a cycloaliphatic structure, optionally including oxygen or other heteroatoms in the alkyl group or cycloaliphatic structure, and R^8 is an alkynyl group having an ethylene group in the polymer backbone.

2. A coating composition comprising a carbamate or terminal urea functional vinyl polymer prepared by a process comprising

(a) reacting a compound having an hydroxyl group and a carbamate group, terminal urea group, or a group that can be converted to a carbamate or terminal urea group, with a cyclic carboxylic acid anhydride group to form a half-ester product with a free acid group; and

(b) reacting the free acid group with an epoxide group,

wherein either

(1) one of the cyclic carboxylic acid anhydride group or the epoxide group is pendant to a vinyl polymer

or

(2) one of the compound having an hydroxyl group, a compound having the cyclic carboxylic acid anhydride group, and a compound having an epoxide group has polymerizable ethylenic unsaturation, said ethylenic unsaturation being polymerized, optionally with one or more copolymerizable monomers, to form a vinyl polymer after reaction of the compound in step (a) or step (b);

and further wherein, when the compound having an hydroxyl group has a group that can be converted to a carbamate or terminal urea group, the group is converted to the carbamate or terminal urea group after step (a).

3. The coating composition of claim 2 further comprising a compound having carbamate functionality.

4. The coating composition of claim 2 further comprising a crosslinker reactive with active hydrogen groups.

5. A method comprising applying the coating composition of claim 4 to a substrate and curing the coating composition to form a coating.

6. The method of claim 5, wherein the coating is a clearcoat, and wherein the substrate has a basecoat layer that the coating composition is applied to.